

**ANDREW G. BURNS**  
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**EDUCATION:** University of Arizona, Tucson, AZ.  
Degree: B.S., College of Engineering and Mines (1992)  
Major: Hydrology

**PROFESSIONAL EXPERIENCE:**

***February 2007 to Present; SNWA Groundwater Resources Department  
Water Resources Division Manager***

Lead team of professional staff with backgrounds and expertise in hydrology, geology, water chemistry, evapotranspiration, and groundwater flow modeling in support of SNWA groundwater projects in southern and eastern Nevada. These projects include:

- Clark, Lincoln, and White Pine Counties Groundwater Development Project.
- Las Vegas Valley Groundwater (Artificial Recharge Program; Small Systems)

Principal responsibilities include directing technical studies, defining work scopes and developing work plans, deriving annual budgets and defining resource needs, preparing technical reports, and providing technical expertise. Major initiatives include the following:

- Preparation of environmental compliance documents (water-related) for environmental impact statements and environmental assessments
- Monitor-, exploratory-, and production-well drilling, hydraulic testing, and groundwater sampling
- Hydrologic, meteorological, water-chemistry monitoring
- Conduct scientific studies (geologic, geophysical, hydrologic, ET, geochemical, etc.) and prepare technical reports
- Develop groundwater flow models
- Provide testimony in support of water-right applications
- Ensure permit compliance (water rights; right-of-way grants, etc.) and fulfill requirements of stakeholder agreements

***1999 to February 2007; SNWA Groundwater Department – Senior Hydrologist / Hydrologist II***

Provide technical expertise related to water-resource investigations, groundwater and surface-water studies, streamflow routing, groundwater flow models, water resource management, Colorado River operations, and hydrologic field investigations. Specific responsibilities included the following:

- Responsible for scientific aspects of the groundwater and surface water projects, including performing water-resource investigations and water-related effects analyses, interacting with stakeholders, and preparing for and participating in water-right hearings
- Responsible for writing work plans, directing technical studies, technical reporting, budget expenditures and scheduling, and interfacing with cooperating agencies
- Assist in the development and documentation of hydrogeologic conceptual models and 3-D numerical flow models
- Conduct hydrologic field investigations requiring various methods of data acquisition, including water-quality sampling, stream gaging, collection of well/spring data, and use of GPS.

- Prepare annual reports in support of LVVWD/SNWA water rights; review and prepare comments to reports related to proposed federal actions concerning LVVWD/SNWA water resources and the Colorado River.
- Conduct advanced analyses of the Colorado River system to evaluate proposed policy changes related to the development of criteria used to determine water-resource availability and operation of system reservoirs and diversion works.
- Represent SNWA in various interstate/local technical forums, work groups, and meetings.

***1998 to 1999; Colorado River Commission, Las Vegas, Nevada***

Provided technical expertise related to hydrologic modeling applications, Colorado River operations, water resource management, and water-use accounting. Reviewed and prepared comments to proposed changes to Colorado River operations, permit applications, water-diversion contracts, and federal reports to ascertain impacts to the rights and interests of Nevada. Represented the Colorado River Commission (CRC) and the State of Nevada in interstate/local technical forums, work groups, and meetings. Specific responsibilities included the following:

- Maintained Colorado River water resources inventory by administering the Las Vegas Wash – Return Flow Credit Methodology. Administered CRC general permit for waters of the Las Vegas Wash.
- Conducted advanced hydraulic and hydrologic analyses related to the quantity and quality of water resources in the Colorado River Basin.
- Consulted with representatives of local water agencies to develop management strategies that optimize use of Nevada’s Colorado River water resources.

***1993 to 1998; IT Corporation, Las Vegas, Nevada***

Provided technical support for project development, data acquisition, data analysis, and reporting in support of a regional groundwater characterization/monitoring program for the Underground Test Area Project of the Department of Energy's Environmental Restoration Division (DOE/ERD). Experience includes:

***1997 to 1998; Task Manager - BULLION Forced-Gradient Tracer Experiment:***

Responsible for planning, coordinating, scheduling, and staffing field operations; writing, reviewing, and implementing work plans and field instructions. Designed monitoring systems, automated data collection, and developed a data management and reporting system. Instrumental in the development and implementation of a sample management application to manage and store data and information resulting from the collection and analysis of over 850 water-quality samples over a four-month period. Successfully started the experiment on schedule and completed the experiment under budget, while meeting all technical objectives.

***Commendations/Awards:***

IT Corporation 1997 National Quality Award (1997)

Letter of Commendation: General Manager, IT Corporation, Las Vegas (1997)

1995 to 1997; Field Supervisor – Hydrologic Monitoring and Water-Quality Sampling:

Responsible for planning, coordinating, scheduling, and staffing field operations; writing, reviewing, and implementing work plans and field instructions; documenting field activities and reporting sample results. Conducted hydraulic tests to estimate the hydraulic properties of saturated-rock units penetrated by deep (greater than 3,000 feet) boreholes.

- Thorough knowledge of the design and implementation of monitoring systems to automate hydrologic data collection and storage using dataloggers and various monitoring instrumentation.
- Experienced in the development, hydraulic testing, and sampling of wells in accordance with industry standards and protocols.

Commendations/Awards:

IT Corporation Health and Safety Award (1995)

1993 – 1998; Staff Hydrologist – Data Analysis/Reporting

Assisted in the development and documentation of a 3-D conceptual model of the hydrogeology of the Nevada Test Site and vicinity. Compiled data sets for inclusion into a regional groundwater flow and transport model using GIS and 3-D software applications (Environmental Resource Management Applications; Intergraph® Workstation).

- Instrumental in the design and population of a relational database consisting of a variety of hydrologic data and information from over 2,300 hydrologic sites in support of groundwater flow and transport modeling.
- Compiled, processed, and analyzed data collected during the drilling, development, and hydraulic-testing of clean and contaminated wells, to provide a basis for making decisions regarding waste management, fluid management, health and safety, and data quality.

Commendations/Awards:

IT Corporation Contribution to Quality Award (1996)

Letter of Appreciation: Director, DOE/ERD (1996)

**PROFESSIONAL AFFILIATIONS:**

Nevada Water Resources Association, Active

**PUBLICATIONS:**

Burns, A.G., Watrus, J.M., Dixon, G.L., 2007, Water-Resources Assessment and Hydrogeologic Report for Cave, Dry Lake, and Delamar Valleys, Presentation to the Office of the Nevada State Engineer, Las Vegas, NV.

Dixon, G.L., Rowley, P.D., Burns, A.G., Watrus, J.M., and Ekren, E.B., 2007, Geology of White Pine and Lincoln Counties and Adjacent Areas, Nevada and Utah— The Geologic Framework of Regional Groundwater Flow Systems: Doc. No. HAM-ED-0001 Southern Nevada Water Authority, Las Vegas, Nevada.

**PUBLICATIONS (continued):**

IT Corporation. 1996a. Groundwater Recharge and Discharge Data Documentation Package (Phase I Data Analysis Documentation, Volume III). Prepared for the U.S. Department of Energy, Nevada Operations Office. Las Vegas, NV.

IT Corporation. 1996b. Hydrologic Parameter Data Documentation Package (Phase 1 Data Analysis Documentation, Volume IV). Prepared for the U.S. Department of Energy, Nevada Operations Office. Las Vegas, NV.

IT Corporation. 1996c. Potentiometric Data Documentation Package (Phase 1 Data Analysis Documentation, Volume II). Prepared for the U.S. Department of Energy, Nevada Operations Office. Las Vegas, NV.

IT Corporation. 1996d. Regional Geologic Model Data Documentation Package (Phase 1 Data Analysis Documentation, Volume I). Prepared for the U.S. Department of Energy, Nevada Operations Office. Las Vegas, NV.

IT Corporation. 1997. Bullion Forced-Gradient Experiment Implementation Plan, Part 1 of 2, ITLV/10972-195, DOE/NV-13-52. Las Vegas, NV.

IT Corporation. 1998a. Report and Analysis of the BULLION Forced-Gradient Experiment, ITLV/13052-042, DOE/NV-13-52. Las Vegas, NV.

Las Vegas Valley Water District, 2001, Water Resources and Ground-Water Modeling in the White River and Meadow Valley Flow System, Clark, Lincoln, Nye and White Pine Counties, Nevada: Las Vegas Valley Water District.

Rowley, P.D., Dixon, G.L., Burns, A.G., Collins, C.A., 2009, Geology and Hydrogeology of the Snake Valley Area, Western Utah and Eastern Nevada, Utah Geological Association, Publication 38, p. 252-270.

Smith, D. L., Johnson J., Burns, A.G., 2004, Climate and Barometric Pressure Influences on Pederson Spring Discharge and the Carbonate Aquifer near the Muddy Springs, Southern Nevada: Journal of the Nevada Water Resources Association, Fall 2004, volume 1, number 1, p. 76-103.

Southern Nevada Water Resource Plan, 1999, 2002, and 2004 (co-author),

Southern Nevada Water Authority, 2005, Hydrogeologic Report in Support of Southern Nevada Water Authority's Proposed Groundwater Development Project in Three Lakes Valley South, Clark County, Nevada

Southern Nevada Water Authority, 2006, Water Resources Assessment for Spring Valley, Presentation to the Office of the Nevada State Engineer, Las Vegas, NV;

**PUBLICATIONS (continued)**

U.S. Department of Energy, Nevada Operations Office. 1997. Regional Groundwater Flow and Tritium Transport Modeling and Risk Assessment of the Underground Test Area, Nevada Test Site, Nevada, DOE/NV--477. Las Vegas, NV.

**SELECTED ABSTRACTS AND PRESENTATIONS:**

Burns, A., 2005, Hydrologic and Geologic Studies in Support of Southern Nevada Water Authority's Proposed Clark, Lincoln, and White Pine Counties Groundwater Development Project, Nevada Water Resources Association, Abstracts of Technical Presentations

Burns, A., 2004, Hydrologic Monitoring Efforts in the Southern Portion of the White River Flow System, Nevada Water Resources Association, Abstracts of Technical Presentations

Burns, A., 2002, Forecasting Colorado River Water Supply Conditions, Nevada Water Resources Association, Abstracts of Technical Presentations

Burns, A., 2001, Interim Surplus Guidelines, Nevada Water Resources Association, Abstracts of Technical Presentations